

Amendments to the Specification

Please replace the paragraph beginning on page 1, lines 5-7, with the following rewritten paragraph:

This application is a [[continuation-in-part]] nonprovisional application of provisional patent application serial number 60/181,142 filed on February 8, 2000, this disclosure of which is incorporated herein by reference, as though in full.

Please insert after "Summary of the Invention" at page 2, line 7, the following new paragraphs:

--A method and apparatus for monitoring the capacity of a valve regulated lead acid battery is disclosed that includes connecting at least one battery monitor to the valve regulated lead acid battery, connecting the battery monitor to a central office through a centralized system using an industry standard data system, and connecting an alarm to the centralized system. Short-term discharge tests are performed on the battery using the battery monitor, which provides input parameters for a neural network and fuzzy logic network used in combination with a prediction algorithm to calculate the predicted capacity. The alarm is activated when said predicted capacity falls below eighty percent, when an individual cell voltage is reduced to 1.95 volts or less, or when a system failure occurs.

In the preferred embodiment of the invention, the battery monitor consists of hardware for monitoring the voltages of each battery cell and currents that are flowing into and out of the battery, and, further, the monitor contains a serial port enabling data to be downloaded onto a network, computer, or printer as well as a real time clock which stamps the tests and data.

The short-term discharge test is preferably a four hour test during which the battery monitor acquires specific data parameters including the cell age, open circuit voltage, voltage after one hour of discharge, voltage after three hours of discharge, and voltage after four hours of discharge. These parameters are used by the

neural network to derive three additional parameters including the slope of discharge curve, the delta between the voltages at three and four hours, and the proximity to two volts of the four-hour voltage.

The four-hour discharge test is performed repeatedly as necessary on the battery, while the neural network is trained only once for a specific kind of battery. The neural network is trained in a lab by determining the actual capacity of a battery then using this actual capacity along with the various parameters noted previously to yield a set of neural network coefficients that are used by the fuzzy logic network and the neural network combined with the prediction algorithm to predict the battery capacity.--

Please delete the following paragraphs from page 9, lines 14 – 24 and page 10, lines 1 – 16.

SUMMARY OF INVENTION

~~A method and apparatus for monitoring the capacity of a valve regulated lead acid battery is disclosed that includes connecting at least one battery monitor to the valve regulated lead acid battery, connecting the battery monitor to a central office through a centralized system using an industry standard data system, and connecting an alarm to the centralized system. Short term discharge tests are performed on the battery using the battery monitor, which provides input parameters for a neural network and fuzzy logic network used in combination with a prediction algorithm to calculate the predicted capacity. The alarm is activated when said predicted capacity falls below eighty percent, when an individual cell voltage is reduced to 1.95 volts or less, or when a system failure occurs.~~

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The short-term discharge test is preferably a four-hour test during which the battery monitor acquires specific data parameters including the cell age, open circuit voltage, voltage after one hour of discharge, voltage after three hours of discharge, and voltage after four hours of discharge. These parameters are used by the neural network to derive three additional parameters including the slope of discharge curve, the delta between the voltages at three and four hours, and the proximity to two volts of the four-hour voltage.

The four-hour discharge test is performed repeatedly as necessary on the battery, while the neural network is trained only once for a specific kind of battery. The neural network is trained in a lab by determining the actual capacity of a battery then using this actual capacity along with the various parameters noted previously to yield a set of neural network coefficients that are used by the fuzzy logic network and the neural network combined with the prediction algorithm to predict the battery capacity.